

## CLAIMS

What is claimed is:

- 1           1.       A network system, comprising:  
2           a sending unit to transmit a first frame fragment, the first frame fragment  
3           including a first data segment extracted from a low priority frame and a first  
4           frame fragmentation control information appended to the end of the first data  
5           segment; and  
6           a receiving unit to receive the first frame fragment transmitted by the  
7           sending unit.
- 1           2.       The system of claim 1, wherein:  
2           the sending unit to transmit a second frame fragment, the second frame  
3           fragment including a high priority frame and a second frame fragmentation  
4           control information appended to the end of the high priority frame; and  
5           the receiving unit to receive the second frame fragment transmitted by the  
6           sending unit.
- 1           3.       The system of claim 1, wherein:  
2           the sending unit to transmit a third frame fragment, the third frame  
3           fragment including a second data segment extracted from the low priority frame  
4           and a third frame fragmentation control information appended to the end of the  
5           second data segment; and  
6           the receiving unit to receive the third frame fragment transmitted by the  
7           sending unit.
- 1           4.       The system of claim 3, wherein each of the first frame  
2           fragmentation control information, the second fragmentation control

3 information, and the third fragmentation control information includes a first  
4 frame fragmentation indicator.

1 5. The system of claim 3, wherein each of the first frame  
2 fragmentation control information, the second fragmentation control  
3 information, and the third fragmentation control information includes a frame  
4 fragment sequence number.

1 6. The system of claim 3, wherein each of the first frame  
2 fragmentation control information, the second fragmentation control  
3 information, and the third fragmentation control information includes a channel  
4 number.

1 7. The system of claim 3, wherein each of the first frame  
2 fragmentation control information, the second fragmentation control  
3 information, and the third fragmentation control information includes a last  
4 frame fragment indicator.

1 8. The system of claim 3, wherein each of the first frame fragmentation  
2 control information, the second fragmentation control information, and the third  
3 fragmentation control information includes an extension indicator.

1 9. A sending unit, comprising:  
2 a frame fragment generator to generate frame fragments from frames,  
3 each of the frame fragments including a payload data and a frame fragmentation  
4 control information appended to the end of the payload data to enable the frame  
5 fragments to be reassembled into frames; and  
6 a data transmitter to transmit the frame fragments generated by the frame  
7 fragment generator.

1           10.    The sending unit of claim 9, wherein the payload data includes an  
2   entire frame.

1           11.    The sending unit of claim 9, wherein the payload data includes a  
2   data segment extracted from a frame.

1           12.    The sending unit of claim 9, wherein the frame fragmentation  
2   control information includes a first frame fragment indicator to specify whether a  
3   frame fragment is a first fragment generated from a frame.

1           13.    The sending unit of claim 9, wherein the frame fragmentation  
2   control information includes a frame fragment sequence number to specify a  
3   sequential order number assigned to each frame fragment generated from a  
4   frame.

1           14.    The sending unit of claim 9, wherein the frame fragmentation  
2   control information includes a channel number to indicate the logical  
3   communication channel to which a frame fragment is designated.

1           15.    The sending unit of claim 9, wherein the frame fragmentation  
2   control information includes a last frame fragment indicator to specify whether a  
3   frame is a last fragment generated from a frame.

1           16.    The sending unit of claim 9, wherein the frame fragmentation  
2   control information includes an extension indicator used to add fields to the  
3   frame fragmentation control information.

1           16.     A machine-readable medium comprising instructions which, when  
2     executed by a machine, cause the machine to perform operations comprising:  
3           a first code segment to generate frame fragments from frames, each of the  
4     frame fragments including a payload data and a frame fragmentation control  
5     information appended to the end of the payload data to enable the frame  
6     fragments to be reassembled into frames; and  
7           a second code segment to transmit the frame fragments generated by the  
8     frame fragment generator.

1           17.     The machine-readable medium of claim 16, wherein the frame  
2     fragmentation control information includes:  
3           a first frame fragment indicator to specify whether a frame fragment is a  
4     first fragment generated from a frame; and  
5           a last frame fragment indicator to specify whether the frame fragment is a  
6     last fragment generated from the frame.

1           18.     The machine-readable medium of claim 16, wherein the frame  
2     fragmentation control information includes a frame fragment sequence number  
3     to specify a sequential order number assigned to each frame fragment generated  
4     from a frame.

1           19.     The machine-readable medium of claim 16, wherein the frame  
2     fragmentation control information includes a channel number to indicate the  
3     logical communication channel to which a frame fragment is designated.

1           20.     The machine-readable medium of claim 16, wherein the frame  
2     fragmentation control information includes an extension indicator used to add  
3     fields to the frame fragmentation control information.

1           21.    A method, comprising:  
2           transmitting a first frame fragment including a first data segment  
3   extracted from a low priority frame and a first frame fragmentation control  
4   information appended to the end of the first data segment;  
5           transmitting a second frame fragment after transmitting the first frame  
6   fragment, the second frame fragment including a high priority frame; and  
7           transmitting a third frame fragment after transmitting the second frame  
8   fragment, the third frame fragment including a second data segment extracted  
9   from the low priority frame.

1           22.    The method of claim 21, wherein transmitting the second frame  
2   fragment includes appending a second frame fragmentation control information  
3   to the end of the high priority frame.

1           23.    The method of claim 22, wherein transmitting the third frame  
2   fragment includes appending a third frame fragmentation control information to  
3   the end of the second data segment extracted from the low priority frame.

1           24.    The method of claim 23, further includes inserting a first frame  
2   fragmentation indicator in each of the first fragmentation control information,  
3   the second fragmentation control information, and the third fragmentation  
4   control information.

1           25.    The method of claim 23, further includes inserting a frame  
2   fragment sequence number in each of the first fragmentation control information,  
3   the second fragmentation control information, and the third fragmentation  
4   control information.

1           26.    The method of claim 23, further includes inserting a channel  
2   number in each of the first fragmentation control information, the second  
3   fragmentation control information, and the third fragmentation control  
4   information.

1           27.    The method of claim 23, further includes inserting a last frame  
2   fragment indicator in each of the first fragmentation control information, the  
3   second fragmentation control information, and the third fragmentation control  
4   information.

1           28.    The method of claim 23, further includes inserting an extension  
2   indicator in each of the first fragmentation control information, the second  
3   fragmentation control information, and the third fragmentation control  
4   information.